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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/888,684	06/25/2001	James Wesley McCoy	CS-5	1018
7590 10/18/2004			EXAMINER	
Daniel R. Brown P.O. Box 821130 Fort Worth, TX 76182-1130			GHULAMALI, QUTBUDDIN	
			ART UNIT	PAPER NUMBER
			2637	

DATE MAILED: 10/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/888,684

Applicant(s)

MCCOY, JAMES WESLEY

Examiner

Qutub Ghulamali

Art Unit

2637

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 June 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 and 21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10, 21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 6/25/01
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-10, 21, drawn to Modulator, classified in class 375, subclass 267, 347.
 - II. Claims 11-20, 22, drawn to Demodulator, classified in class 375, subclass 316.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because other demodulation technique can be used. The subcombination has separate utility such as demodulator for receiving a composite signal.

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

4. During a telephone conversation with Mr. Daniel R. Brown on 10/14/2004 a provisional election was made without traverse to prosecute the invention of Group I, claim 1-10, 21.

Affirmation of this election must be made by applicant in replying to this Office action. Claims 11-20, 22 withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 6, 21, are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 6 recites the limitations "said transform resolution", "said transform decimation", "said filter decimation rate", in lines 6-7, 9 and 16, respectively. There is insufficient antecedent basis for these limitations in the claim.

Claim 21, recites the limitations "the greatest common divisor", "the filter", in lines 6, and 11, respectively. There is insufficient antecedent basis for these limitations in the claim.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-10, 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Harrison (US Patent No. 5,323,391).

Consider claims 1, 6, 21, Harrison teaches a method and apparatus for use in a multichannel digital transmitter and receiver (figs. 1, 4), comprising an inverse discrete Fourier

Art Unit: 2637

transform 324 coupled to receive and transform the plurality of sub-channels signals (316-322) into a plurality of time domain signals (326-332), a multiple channel polyphase filters (334-340) whose function is well defined in the disclosed patent are coupled to receive a plurality of time domain signals and output a plurality of filtered signals(342-348), the pre-filters 308, 310, 312, and 314 interpolate the N inputs 300, 302, 304, and 306 to increase the sampling rate such that a subsequent inverse discrete Fourier transformer 324 can operate at a rate higher than that of the N inputs 300, 302, 304, and 306, a commutator 350 distributes portions (fractions) of filtered signals(342-348), such that if the commutator 350 is operating at a sampling rate F_s (frequency spacing), then each of the N filters receives portions of the digitized signal at a rate defined by F_s/N (N represent the number of channels in the digitized signal) (col. 13, lines 34-67; col. 14, lines 1-59).

Regarding claims 2, 7, Harrison discloses the commutator 350, is operating at a sampling rate F_s (frequency spacing), then each of the N filters receives portions of the digitized signal at a rate (decimation) defined by F_s/N (N represent the number of channels in the digitized signal) (col. 13, lines 34-67).

Regarding claims 3, 8, Harrison discloses his invention a multi-channel digital transmitter and receiver suitable for operation within a wireless carrier for wireless transmission (abstract, col. 2, lines 12-67).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

Art Unit: 2637

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 4, 5, 9, 10 rejected under 35 U.S.C. 103(a) as being unpatentable over Harrison. Harrison discloses every feature of the claimed invention as applied to claims 1-3, 6-8, 21 above. Harrison however, fails to specifically disclose transform, filter and commutator as being implemented with executable software on a DSP processing means. A traditional communications unit could include a digital signal processing means programmed to process the transform, filter and commutator elements through executable software as a design choice. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to include a digital signal processor programmed to process the transform, filter and commutator elements with the communication circuit of Harrison such that the communication circuit may operate efficiently (col. 3, lines 30-40)

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Harrison (US Patent 5,396,489), Allpress et al (US Patent 6,496,546), Gatherer et al (US Pub No. 2002/0176509), and Zangi (US Patent 6,005,900) cited as arts of interest showing modulation/demodulation computations and techniques.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Qutub Ghulamali whose telephone number is (571) 272-3014. The examiner can normally be reached on Monday-Friday from 8:00AM - 5:00PM.

Art Unit: 2637

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on (571) 272-2988. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

QG.
October 13, 2004.

TEMESGHEN GHEBRETISSAE
PRIMARY EXAMINER

10/15/04
OR